



MONASH University
Information Technology

FIT5168
Object and semi-structured database

Unit Guide

Semester 1, 2012

The information contained in this unit guide is correct at time of publication. The University has the right to change any of the elements contained in this document at any time.

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FIT5168 Object and semi-structured database - Semester 1, 2012

Management of semi-structured data. The unit looks at the limitation of current relational based DBMS in handling XML. Explore the concept of modelling XML using XML Schema and retrieving it using XSLT. Design issues in creating native XML database. Exploring the approaches taken by current relational DBMS in storing and retrieving XML-based data.

Mode of Delivery

Caulfield (Evening)

Contact Hours

2 hrs lectures/wk, 2 hrs laboratories/wk

Workload

Workload commitments for this unit:

- two-hour lecture
- two-hour tutorial
- a minimum 6-8 hours of personal study including meeting time to complete group assignments.

Unit Relationships

Prerequisites

Recommended knowledge: Knowledge of relational database.

Chief Examiner

Dr Mark Carman

Campus Lecturer

Caulfield

Mark Carman

Consultation hours: Wednesday 4pm-5pm or or email to make an appointment

Academic Overview

Outcomes

At the completion of this unit students will:

- have the knowledge of managing data that may not be appropriately modelled and implemented as relational model;
- be able to design data repository for XML documents;
- be able to apply appropriate technology to manage XML data;
- be able to use current DBMS to store and retrieve non-relational data such as XML and multimedia;
- appreciate the strength and weaknesses of several approaches such as object relational, native XML and object oriented DBMS in handling the XML and multimedia database.

Graduate Attributes

Monash prepares its graduates to be:

1. responsible and effective global citizens who:

- a. engage in an internationalised world
- b. exhibit cross-cultural competence
- c. demonstrate ethical values

critical and creative scholars who:

- a. produce innovative solutions to problems
- b. apply research skills to a range of challenges
- c. communicate perceptively and effectively

Assessment Summary

Examination: 50%; In-semester assessment: 50%

Assessment Task	Value	Due Date
Designing XML database.	30%	Friday 13 April 2012
Designing data storage and retrieving XML from a Relational DB	20%	Friday 25 May 2012
Examination 1	50%	To be advised

Teaching Approach

• Lecture and tutorials or problem classes

The teaching of this unit will consist of lectures, tutorials, self-study and group work. The main concepts of the unit will be delivered during lectures. Practical exercises on the concepts will be carried out during tutorials. It is expected that students will attempt the tutorial exercises prior to attending the tutorial classes. The tutorial classes will be used to discuss problems encountered while completing the exercises or to discuss important issues that students may need to be

Academic Overview

aware of in completing the exercises.

Although tutorials are not compulsory, it is the student's responsibility to attend and participate in tutorial discussion as tutorials are the preferred venue for clarification and queries on the topics. Unless students have good reasons to miss tutorial classes, no consultation outside tutorial classes will be provided in regards to the tutorial exercises and discussion.

Feedback

Our feedback to You

Types of feedback you can expect to receive in this unit are:

- Informal feedback on progress in labs/tutes
- Graded assignments with comments

Your feedback to Us

Monash is committed to excellence in education and regularly seeks feedback from students, employers and staff. One of the key formal ways students have to provide feedback is through SETU, Student Evaluation of Teacher and Unit. The University's student evaluation policy requires that every unit is evaluated each year. Students are strongly encouraged to complete the surveys. The feedback is anonymous and provides the Faculty with evidence of aspects that students are satisfied and areas for improvement.

For more information on Monash's educational strategy, and on student evaluations, see:

<http://www.monash.edu.au/about/monash-directions/directions.html>

<http://www.policy.monash.edu/policy-bank/academic/education/quality/student-evaluation-policy.html>

Previous Student Evaluations of this unit

If you wish to view how previous students rated this unit, please go to

<https://emuapps.monash.edu.au/unitevaluations/index.jsp>

Unit Schedule

Week	Activities	Assessment
0		No formal assessment or activities are undertaken in week 0
1	Introducing semi-structured data and XML	
2	Data Modeling and Defining XML Datatypes in XML Schema	
3	Advanced XML Schema	
4	Document Engineering and XML Namespaces	
5	XML Path Expressions using XPath	
6	Transforming XML with XSLT	
7	Advanced XSLT	
8	Storing XML in a Database	Assignment 1: Designing XML database due Friday 13 April 2012
9	Querying XML in a Relational Database	
10	Querying XML with XQuery	
11	Web Service standards	
12	Guest lecture and revision	Assignment 2: Designing data storage and retrieving XML from a Relational DB due Friday 25 May 2012
	SWOT VAC	No formal assessment is undertaken SWOT VAC
	Examination period	LINK to Assessment Policy: http://policy.monash.edu.au/policy-bank/academic/education/assessment/assessment-in-coursework-policy.html

*Unit Schedule details will be maintained and communicated to you via your MUSO (Blackboard or Moodle) learning system.

Assessment Requirements

Assessment Policy

Faculty Policy - Unit Assessment Hurdles

(<http://www.infotech.monash.edu.au/resources/staff/edgov/policies/assessment-examinations/unit-assessment-hu>)

Assessment Tasks

Participation

• Assessment task 1

Title:

Designing XML database.

Description:

This assessment aims to evaluate students' ability to design an XML repository, consisting of XML documents and their associated XML schemas.

This is a group assignment. The group will consist of 2 students.

Weighting:

30%

Criteria for assessment:

Explanation of the design process that the student followed in producing the repository and the reasoning behind any design decisions made.

The correctness and robustness of the design (XML Schema) produced.

The correctness of the XML document instances according to the schema.

The tutor will monitor individual contributions to the group when allocating marks to members of the group

Due date:

Friday 13 April 2012

• Assessment task 2

Title:

Designing data storage and retrieving XML from a Relational DB

Description:

This assessment aims to evaluate students' ability to use transformation and/or query languages to access and manipulate data from an XML repository. The assessment will include the design of several queries/transformations to demonstrate the students' ability to use XSLT and/or XQuery.

This is a group assignment. A group consists of 2 students.

Weighting:

20%

Criteria for assessment:

The creation of declarative scripts that enable the appropriate data to be retrieved in the correct format from an XML repository.

The correct use of XSLT and/or XQuery constructs.

Assessment Requirements

The tutor will monitor individual contributions to the group when allocating marks to members of the group.

Due date:

Friday 25 May 2012

Examinations

• Examination 1

Weighting:

50%

Length:

2 hours

Type (open/closed book):

Closed book

Electronic devices allowed in the exam:

None

Remarks:

Quick reference guide on XML Schema and XSLT will be provided as part of the exam booklet.

Assignment submission

It is a University requirement

(<http://www.policy.monash.edu/policy-bank/academic/education/conduct/plagiarism-procedures.html>) for students to submit an assignment coversheet for each assessment item. Faculty Assignment coversheets can be found at <http://www.infotech.monash.edu.au/resources/student/forms/>. Please check with your Lecturer on the submission method for your assignment coversheet (e.g. attach a file to the online assignment submission, hand-in a hard copy, or use an online quiz).

Online submission

If Electronic Submission has been approved for your unit, please submit your work via the VLE site for this unit, which you can access via links in the my.monash portal.

Extensions and penalties

Submission must be made by the due date otherwise penalties will be enforced.

You must negotiate any extensions formally with your campus unit leader via the in-semester special consideration process:

<http://www.infotech.monash.edu.au/resources/student/equity/special-consideration.html>.

Returning assignments

Students can expect assignments to be returned within two weeks of the submission date or after receipt, whichever is later.

Other Information

Policies

Monash has educational policies, procedures and guidelines, which are designed to ensure that staff and students are aware of the University's academic standards, and to provide advice on how they might uphold them. You can find Monash's Education Policies at:

<http://policy.monash.edu.au/policy-bank/academic/education/index.html>

Key educational policies include:

- Plagiarism
(<http://www.policy.monash.edu/policy-bank/academic/education/conduct/plagiarism-policy.html>)
- Assessment
(<http://www.policy.monash.edu/policy-bank/academic/education/assessment/assessment-in-coursework-p>)
- Special Consideration
(<http://www.policy.monash.edu/policy-bank/academic/education/assessment/special-consideration-policy.h>)
- Grading Scale
(<http://www.policy.monash.edu/policy-bank/academic/education/assessment/grading-scale-policy.html>)
- Discipline: Student Policy
(<http://www.policy.monash.edu/policy-bank/academic/education/conduct/student-discipline-policy.html>)
- Academic Calendar and Semesters (<http://www.monash.edu.au/students/key-dates/>);
- Orientation and Transition (<http://www.infotech.monash.edu.au/resources/student/orientation/>);
and
- Academic and Administrative Complaints and Grievances Policy
(<http://www.policy.monash.edu/policy-bank/academic/education/management/complaints-grievance-policy>)
- Codes of Practice for Teaching and Learning
(<http://www.policy.monash.edu.au/policy-bank/academic/education/conduct/suppdocs/code-of-practice-tea>)

Student services

The University provides many different kinds of support services for you. Contact your tutor if you need advice and see the range of services available at www.monash.edu.au/students. For Sunway see <http://www.monash.edu.my/Student-services>, and for South Africa see <http://www.monash.ac.za/current/>

The Monash University Library provides a range of services and resources that enable you to save time and be more effective in your learning and research. Go to <http://www.lib.monash.edu.au> or the library tab in my.monash portal for more information. At Sunway, visit the Library and Learning Commons at <http://www.lib.monash.edu.my/>. At South Africa visit <http://www.lib.monash.ac.za/>.

Academic support services may be available for students who have a disability or medical condition. Registration with the Disability Liaison Unit is required. Further information is available as follows:

- Website: <http://monash.edu/equity-diversity/disability/index.html>;
- Email: dlu@monash.edu
- Drop In: Equity and Diversity Centre, Level 1 Gallery Building (Building 55), Monash University, Clayton Campus, or Student Community Services Department, Level 2, Building 2, Monash University, Sunway Campus
- Telephone: 03 9905 5704, or contact the Student Advisor, Student Community Services at 03 55146018 at Sunway

Other Information

Other

The recommended readings of this unit will be provided weekly through MUSO